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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,073

12/09/2005

Takashi Masuko

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EXAMINER

DESAI, ANISH P

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,073	Applicant(s) MASUKO ET AL.	
	Examiner ANISH DESAI	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,6-18 and 20-33 is/are pending in the application.
- 4a) Of the above claim(s) 3,8,10-14,21-24 and 27-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,6,7,9,15-18,20,25,26 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/25/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments in response to the Office action dated 03/27/08 have been fully considered.
2. It is noted that Applicant has cancelled independent claim 1 and now added a new independent claim 33, which includes all the limitations from claims 1, 4, and 5. Further, Applicant has added a new limitation of molecular weight and Tg of polyimide in claim 33. Support for claim 33 is found in the specification.
3. Rejection of claim 1 is considered moot in view of the claim cancellation. All of the art rejections based on Takeda et al. (US 2001/0035533A1) are maintained.
4. A new 35 USC Section 112-second paragraph rejection to claim 33 is made.
5. The amendment to specification received on 08/27/08 is entered into consideration, because it does not add any new matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2, 6,7, 9,15-18, 20, 25, 26, and 33 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. It is noted that new claim 33 recites "the (A) polyimide resin contains one or more kinds of polyimide resin". It is submitted that phrase such as "kinds of" is indefinite because it is not clear as to what is meant by "kinds of polyimide resin". The Examiner respectfully suggests deletion of the phrase "kids of".

8. As to claim 20, it is noted that claim 20 depends from claim 33. It is noted that claim 33 is directed to an adhesive film, whereas claim 20 requires the adhesive film that is laminated onto a silicone wafer. Therefore, it is not clear whether silicone wafer is part of the structure of the adhesive film or an intended use of the adhesive film since claim 33 is directed to an adhesive film.

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Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 33 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takeda et al. (US 2001/0035533A1).

10. Regarding claim 33, abstract of Takeda discloses a semiconductor device having a support member such as a lead frame to which a semiconductor film is die-bonded with bonding material (Adhesive film) and encapsulated with resin, and a process for the...device (0001).

11. The film die-bonding material of Takeda comprises a mixture of polyimide resin and epoxy resin (see Example 1). Further, Example 1 of Takeda discloses 10 g of epoxy resin for 100 grams of polyimide resin, which meets claim requirement of 1 to 50 parts by weight of epoxy resin is contained relative to 100 parts by weight of the polyimide resin.

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12. As to the claim requirement of the polyimide resin having SP value, molecular weight, glass transition temperature, formation of polyimide by reacting diamine and acid dianhydride satisfying the condition where a difference between a heat generation initiating temperature and a heat generation peak temperature by means of DSC is 10C or smaller, it is reasonable to presume that said features are present in the polyimide of Takeda.

13. The support for said feature is based on the fact that the polyimide of Takeda and that of Applicant are formed of same process and reactants. It is noted that paragraphs 0031-0032 of Applicant's US Patent Application Publication 2007/0098995A1 discloses following with respect to production of polyimide resin:

[0031] The polyimide resin can be obtained, for example, by condensation-reacting tetracarboxylic acid dianhydride and diamine by the known method. That is, equivalent mols or approximately equivalent mols of tetracarboxylic acid dianhydride and diamine are used (order of addition of respective components is arbitrary) to perform an additional reaction at a reaction temperature of 80° C. or lower, preferably 0 to 60° C. in an organic solvent. As a reaction progresses, a viscosity of a reaction solution is gradually increased, and polyamidic acid, which is a precursor of polyimide, is produced.

[0032] A molecular weight of the polyamidic acid may be adjusted by depolymerization by heating at a temperature of 50 to 80° C. The polyimide resin can be obtained by dehydration ring closing of the aforementioned reaction product (polyamidic acid). Dehydration ring closing can be performed by a thermal ring closing method in which heating treatment is performed, or a chemical ring closing method in which a dehydrating agent is used.

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14. It is noted that in paragraphs 0162-0163 of Takeda discloses following with respect to the production of polyimide:

[0162] The polyimide can be obtained by subjecting the tetracarboxylic dianhydride and the diamine to condensation by a known method. More specifically, using the tetracarboxylic dianhydride and the diamine in substantially equimolar weights (the respective components may be added in any order), the reaction is carried out in an organic solvent at a reaction temperature of 80° C. or below, and preferably at 0° C. to 50° C. With the progress of the reaction, the viscosity of reaction mixture gradually increases, so that a polyimide precursor polyamic acid is formed.

[0163] The polyimide can be obtained by dehydration ring closure of the above reaction product (polyamic acid). The dehydration ring closure may be carried out by a method of heat treatment at 120° C. to 250° C. or by a chemical method.

15. Based on the aforementioned disclosure of Takeda and Applicant, it is noted that polyimide of Takeda is formed of same process and same reactants as claimed by Applicant. Therefore, it is reasonable to presume that the aforementioned features would be present in the invention of Takeda. The burden is respectfully shifted to Applicant to prove it otherwise (see *In re Fitzgerald*, 205 USPQ 594). In addition, the presently claimed properties would obviously have been present once the polyimide of Takeda is provided (see *In re Best*, 195 USPQ at 433, footnote 4 CCPA 1977).

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16. Further as to the claim requirement of polyimide resin contained at 50% by weight of more of a total polyimide resin, Example 1 of Takeda which utilizes 100 grams of polyimide meets the aforementioned requirement (100 grams of polyimide/100 grams total of polyimide=1 or 100% by weight of polyimide).

17. With respect to the claimed properties of tan delta temperature of adhesive and the flow amount of the adhesive, it is reasonable to presume that said properties are present in the invention of Takeda.

18. Support for said presumption is based on the fact that the adhesive films of Takeda and Applicant comprise a mixture of polyimide (A) and epoxy resin (B) as set forth in claim 33. Thus, the adhesive films of Takeda and Applicant are structurally and chemically similar. Thus, the aforementioned claimed properties would be present. The burden is respectfully shifted to Applicant to prove it otherwise (see *In re Fitzgerald*, 205 USPQ 594). In addition, the presently claimed properties would obviously have been present once the adhesive film of Takeda is provided (see *In re Best*, 195 USPQ at 433, footnote 4 CCPA 1977). Accordingly, Takeda anticipates or strongly suggest the claimed invention.

19. Claims 2, 6, 7, 9, 15, 16, 20, and 33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takashi (JP 11-140386, English translation provided by the Examiner).

20. Regarding claim 33, Takashi discloses an adhesive film comprising a mixture of thermoplastic resin such as polyimide resin and thermosetting resin such as epoxy resin (see 0008, 0015-0016). Further, at page 21 paragraph 0045, Takashi discloses that

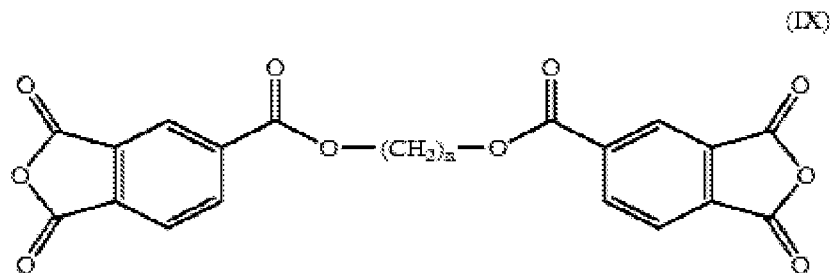
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with respect to 100 parts by weight of the thermoplastic resin [polyimide], the thermosetting resin [epoxy] is used preferably at 1-100 parts by weight, more preferably at 2-50 parts by weight. This reads on Applicant claimed requirement of 1 to 50 parts by weight of the epoxy resin is contained relative to 100 parts by weight of the polyimide resin. Further, the disclosure of 100 parts by weight of polyimide resin meets claim requirement of polyimide is contained at 50% by weight or more of a total polyimide resin (100 grams of polyimide/100 grams total of polyimide = 1 or 100% by weight of polyimide).

21. As to the claimed properties of the polyimide resin having SP value, molecular weight, glass transition temperature, "polyimide resins being obtained by reacting a diamine and...DSC is 10°C or smaller", it is reasonable to presume that said features are present in the polyimide of Takashi.

22. The support for said feature is based on the fact that the polyimide of Takashi and that of Applicant are formed of same process and same reactants. The process for obtaining Applicant's polyimide resin is previously disclosed above in this Office Action, and it is incorporated here by reference.

23. Additionally, as acid dianhydride, Applicant discloses tetracarboxylic acid dianhydride with following formula at paragraph 0033 of Applicant's US Patent Application Publication 2007/0098995A1:



24. Moreover, at paragraph 0036 of Applicant's US Patent Application Publication 2007/0098995A1, Applicant discloses use of aliphatic diamines that can be used in formation of polyimide.

25. Takashi at paragraphs 0021, 0026, 0029, 0032, and 0033 discloses following with respect to production of polyimide:

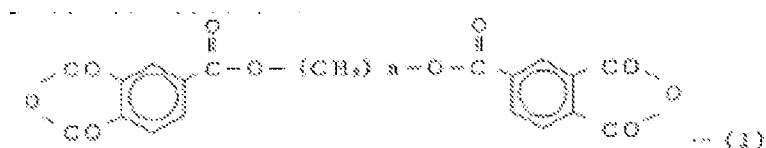
[0021]

The thermoplastic resins that can be used are not to limited to those mentioned above. Polyimide resin is preferred. The polyimide resin, in general, can be manufactured by the reaction of a tetracarboxylic acid dianhydride and a diamine.

[0026]

The tetracarboxylic acid dianhydrides represented by the following formula (I)

Chemical 3



[0029]

As the diamine as one of the other raw materials of the polyimide resin mentioned above, 1,2-diaminoethane, 1,3-diaminopropane, 1,4-diaminobutane, 1,5-diaminopentane, 1,6-diaminohexane, 1,7-diaminoheptane, 1,8-diaminooctane, 1,9-diaminononane, 1,10-diaminodecane, 1,11-diaminoundecane, 1,12-diaminododecane, and other aliphatic diamines,

[0032]

The condensation reaction of the tetracarboxylic acid dianhydride and the diamine is carried out in an organic solvent. In this case, it is preferable to use equimolar or approximately equimolar amounts of the tetracarboxylic acid dianhydride and the diamine. The addition sequence of each component is at will. As the organic solvents, dimethyl acetamide, dimethyl formamide, N-methyl-2-pyrrolidone, dimethyl sulfoxide, hexamethylphosphorylamide, m-cresol, o-chlorophenol and so on are available.

[0033]

The reaction temperature is less than 80°C, preferably 0-50°C. As the reaction proceeds, the viscosity of the reaction solution increases gradually. In this case, polyamide acids as the polyimide precursors is formed.

26. Thus, based on the aforementioned disclosure of Takashi and Applicant, it is respectfully submitted that the polyimide of Takashi is formed of similar process and similar reactants as that of claimed by Applicant. Therefore, the aforementioned claimed properties would be present in the polyimide of Takashi. The burden is respectfully shifted to Applicant to prove it otherwise (see *In re Fitzgerald*, 205 USPQ 594). In addition, the presently claimed properties would obviously have been present

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once the polyimide of Takashi is provided (see *In re Best*, 195 USPQ at 433, footnote 4 CCPA 1977).

27. With respect to the claimed properties of tan delta temperature of adhesive and the flow amount of the adhesive, it is reasonable to presume that said properties are present in the invention of Takashi.

28. Support for said presumption is based on the fact that the adhesive films of Takashi and Applicant comprise a mixture of polyimide (A) and epoxy resin (B) as set forth in claim 33. Thus, the adhesive films of Takashi and Applicant are structurally and chemically similar. Thus, the aforementioned claimed properties would be present. The burden is respectfully shifted to Applicant to prove it otherwise (see *In re Fitzgerald*, 205 USPQ 594). In addition, the presently claimed properties would obviously have been present once the adhesive film of Takashi is provided (see *In re Best*, 195 USPQ at 433, footnote 4 CCPA 1977). Accordingly, Takashi anticipates or strongly suggests the claimed invention.

29. Regarding claim 2, it is noted that paragraphs 0037-0038 of Takashi discloses epoxy resin containing tri or more functional epoxy resins. With respect to claims 6 and 7, paragraph 0039 of Takashi discloses epoxy resin curing agent that is phenol-based compound having molecular weight of 400-1500. As to claim 9, since Takashi and Applicant both disclose same epoxy resin and phenol-based curing agent, it is reasonable to presume that said equivalent ration of epoxy equivalent of the epoxy resin and an OH-equivalent of epoxy curing agent be present in the invention of Takashi. Alternatively, it would have been obvious to provide equivalent ration of the epoxy

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equivalent of epoxy resin and OH-equivalent of the epoxy curing agent, motivated by the desire to fully react all of the reactive epoxy groups with the curing agent.

30. As to claims 15 and 16, Takashi at paragraph 0018 discloses filler such as butadiene-styrene.

31. As to claim 20, it is noted that the adhesive film of Takashi as set forth previously includes polyimide resin and epoxy resin as claimed in claim 33. Therefore, it is reasonable to presume that adhesive film of Takashi when laminated on a silicone wafer at 80°C, a 90°C peeling force at 25°C to the silicone wafer is 5N/m or larger is present.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. Claims 17, 18, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. (JP 11-140386, English translation provided by the Examiner).

33. Takeshi discloses claimed invention except for the average and maximum particle diameter of the filler and amount of the filler. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the particle diameter of the filler and the amount of the filler in the invention of Takashi, since it has been held that where the general conditions of a claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves routine skill in the art (*In re Aller*, 105 USPQ 233). In the instantly claimed invention Takashi discloses an adhesive film containing polyimide resin, epoxy resin, and a filler. Therefore, selecting a proper diameter and weight% of filler would have been obvious, motivated by the desire to optimize the dispersion of the filler in the aforementioned resin, thereby enhancing the strength of the adhesive film.

Response to Arguments

34. Applicant's arguments filed 08/27/08 have been fully considered but they are not persuasive.

35. With respect to the art rejections based on Takashi (JP 11-140386), it is noted that throughout his/her arguments, Applicant generally asserts that JP 11-140386 does not teach or suggest the presently claimed invention of claim 33. Specifically Applicant asserts that JP 11-140386 would have neither disclosed nor would have suggested the presently claimed adhesive film, including the SP value and weight average molecular weight, or Tg of the polyimide resin, or amount of polyimide resin and epoxy resin, or wherein the polyimide resin obtained by reacting specified diamine and acid dianhydride satisfying conditions as in claim 33, or tan delta temperature and flow amount as claimed in claim 33. According to Applicant, JP 11-140386 is directed to different objectives (that is withstanding soldering heat in mounting, reduction of generation of outgas and avoiding staining of semiconductor elements or heating apparatus.

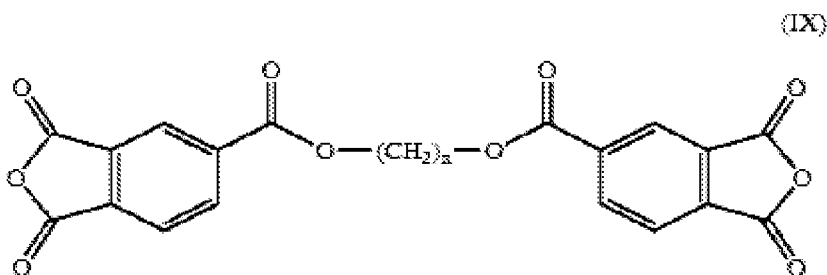
36. The Examiner respectfully disagrees for the following reasons:

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37. As set forth previously, as to the claimed properties of the polyimide resin having SP value, molecular weight, glass transition temperature, "polyimide resins being obtained by reacting a diamine and...DSC is 10°C or smaller", it is reasonable to presume that said features would be inherently present in the polyimide of Takashi.

38. The support for said feature is based on the fact that the polyimide of Takashi and that of Applicant are formed of same process. The process for obtaining Applicant's polyimide resin is previously disclosed above in this Office Action, and it is incorporated here by reference.

39. Additionally, as acid dianhydride Applicant discloses tetracarboxylic acid dianhydride with following formula at paragraph 0033 of Applicant's US Patent Application Publication 2007/0098995A1:



40. Moreover, at paragraph 0036 of Applicant's US Patent Application Publication 2007/0098995A1, Applicant discloses use of aliphatic diamines.

41. Takashi at paragraphs 0021, 0026, 0029, 0032, and 0033 discloses following respectively:

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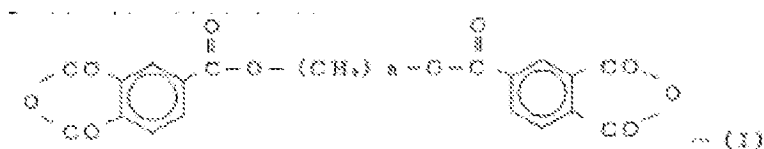
[0021]

The thermoplastic resins that can be used are not limited to those mentioned above. Polyimide resin is preferred. The polyimide resin, in general, can be manufactured by the reaction of a tetracarboxylic acid dianhydride and a diamine.

[0026]

The tetracarboxylic acid dianhydrides represented by the following formula (I)

Chemical 3



[0029]

As the diamine as one of the other raw materials of the polyimide resin mentioned above, 1,2-diaminoethane, 1,3-diaminopropane, 1,4-diaminobutane, 1,5-diaminopentane, 1,6-diaminohexane, 1,7-diaminoheptane, 1,8-diaminooctane, 1,9-diaminononane, 1,10-diaminodecane, 1,11-diaminoundecane, 1,12-diaminododecane, and other aliphatic diamines,

[0032]

The condensation reaction of the tetracarboxylic acid dianhydride and the diamine is carried out in an organic solvent. In this case, it is preferable to use equimolar or approximately equimolar amounts of the tetracarboxylic acid dianhydride and the diamine. The addition sequence of each component is at will. As the organic solvents, dimethyl acetamide, dimethyl formamide, N-methyl-2-pyrrolidone, dimethyl sulfoxide, hexamethylphosphorylamide, m-cresol, o-chlorophenol and so on are available.

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[0033]

The reaction temperature is less than 80°C, preferably 0-50°C. As the reaction proceeds, the viscosity of the reaction solution increases gradually. In this case, polyamide acids as the polyimide precursors is formed.

42. Thus, based on the aforementioned disclosure of Takashi and Applicant, it is respectfully submitted that the polyimide of Applicant and that of Takashi are produced by similar processes and similar reactants. Therefore, the aforementioned claimed properties would be present in the polyimide of Takashi. The burden is respectfully shifted to Applicant to prove it otherwise (see *In re Fitzgerald*, 205 USPQ 594). In addition, the presently claimed properties would obviously have been present once the polyimide of Takashi is provided (see *In re Best*, 195 USPQ at 433, footnote 4 CCPA 1977).

43. With respect to the claimed properties of tan delta temperature of adhesive and the flow amount of the adhesive, it is reasonable to presume that said properties are present in the invention of Takashi.

44. Support for said presumption is based on the fact that the adhesive films of Takashi and Applicant comprise a mixture of polyimide (A) and epoxy resin (B) as set forth in claim 33. Thus, the adhesive films of Takashi and Applicant are structurally and chemically similar. Thus, the aforementioned claimed properties would be present. The burden is respectfully shifted to Applicant to prove it otherwise (see *In re Fitzgerald*, 205 USPQ 594). In addition, the presently claimed properties would obviously have been present once the adhesive film of Takashi is provided (see *In re Best*, 195 USPQ at

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433, footnote 4 CCPA 1977). Accordingly, Takashi anticipates or strongly suggests the claimed invention. Further, it is noted that Applicant has provided no factual evidence other than merely arguing that aforementioned properties are not present or suggested by JP 11-140386.

45. Additionally contrary to Applicant's assertion that the presently claimed invention requires polyimide resin obtained by reacting specified diamine and an acid dianhydride; it is respectfully submitted that claimed invention does not provide a specific diamine and acid dianhydride. Claims merely recite "diamine" and "acid dianhydride". Further, as previously noted, Applicant and JP 11-140386 disclose same diamine and acid dianhydride as disclosed by Applicant in specification. As to Applicant's arguments that specific amounts of diamine and epoxy resin are not disclosed by JP 11-140386, the Examiner respectfully submits that at page 21 paragraph 0045, Takashi discloses that with respect to 100 parts by weight of the thermoplastic resin [polyimide], the thermosetting resin [epoxy] is used preferably at 1-100 parts by weight, more preferably at 2-50 parts by weight. This reads on Applicant claimed requirement of 1 to 50 parts by weight of the epoxy resin is contained relative to 100 parts by weight of the polyimide resin. The disclosure of 100 parts by weight of polyimide resin meets claim requirement of polyimide is contained at 50% by weight or more of a total polyimide resin (100 grams of polyimide/100 grams total of polyimide = 1 or 100% by weight of polyimide).

46. Accordingly, Applicant's arguments are not found persuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. D./

Examiner, Art Unit 1794

/Hai Vo/

Primary Examiner, Art Unit 1794